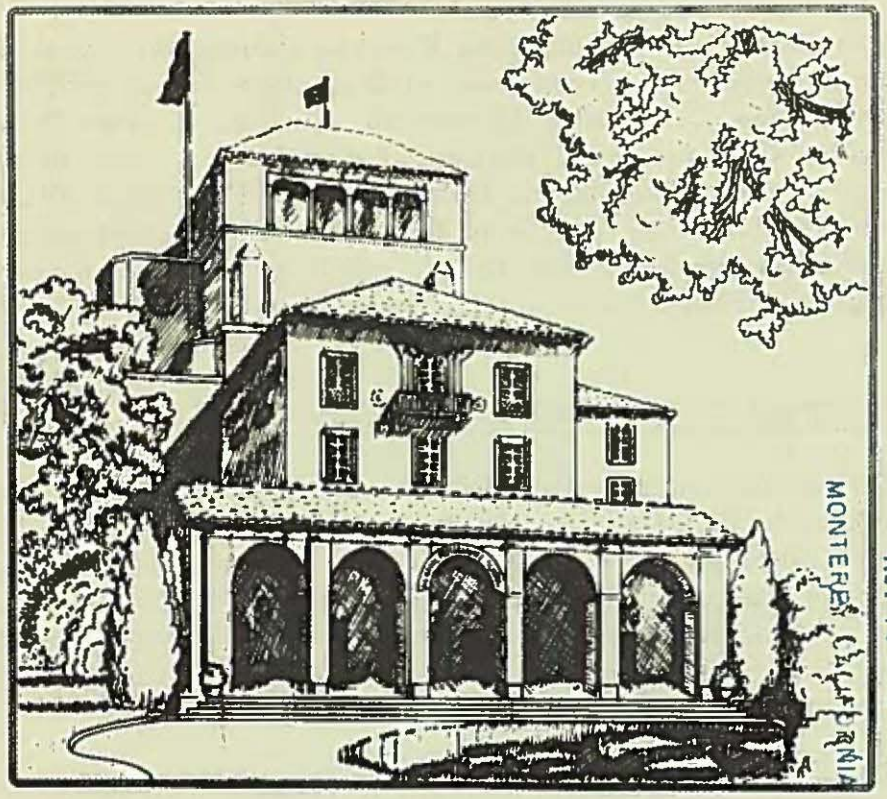
1966-11-14

Naval Postgraduate School Faculty Bulletin, 1966-11-14

Monterey, California, Naval Postgraduate School

Photo in Library's file



U.S. Naval Postgraduate School

FACULTY BULLETIN

14 November 1966

ELECTRICAL ENGINEERING VISITING COMMITTEE

A Visiting Committee will devote November 17-19 studying all aspects of the Electrical Engineering Department. This will be the third such visiting committee this year. The function of the committee is to provide expert and objective assessment of the academic quality of the departmental program and to provide advice on future developmental goals in the light of the mission of the School and the foreseen future developments in technology.

The Electrical Engineering Visiting Committee, appointed by the Superintendent, is composed of Dean John Ragazzini, College of Engineering, New York University; Dr. M. E. Van Valkenburg, Chairman, Department of Electrical Engineering, Princeton University; Dr. Jacob Millman, Department of Electrical Engineering, Columbia University; Dr. Gene Franklin, Department of Electrical Engineering, Stanford University; and Rear Admiral Frederick S. Withington, USN (Ret).

APPOINTMENT OF ACADEMIC ASSOCIATES.

Two faculty members have recently been appointed Academic Associates to fill unexpired terms in their departments. Professor Abraham Sheingold has been appointed Academic Associate for Electronics and Communications Engineering Curricula for a term ending 30 June 1968, and Professor H. A. Hoverland has been appointed Academic Associate for the Naval Management Curriculum for a term ending 30 June 1967.

As Academic Associates they are responsible, under the Dean of Curricula, for the academic soundness of their curricula, and are appointed to the part-time duty by the Academic Dean. Their duties include providing liaison between Curricular Officers and their Departments and advising the Curricular Officers concerning the elements of each curriculum, particularly with regard to structure, content of courses, timing and emphasis, as these factors may bear on coverage in each subject and on achievement of curricular objectives.

CAMPUS VISITORS.

During the period 3-11 November the Navy Management Systems Center was host to Mr. R. L. Michaels and Mr. J. M. Garrity, Staff members of the House Committee on Appropriations, and Mr. M. H. Lanman, Assistant General Counsel--Fiscal Matters, Office of the Secretary of Defense. The purpose of their visit was to attend the last week of the four-week Defense Management Systems

Course for detailed presentation and discussions of the management concepts of Project Prime. This project was initiated by Assistant Secretary of Defense (Comptroller) Dr. Robert Anthony to develop a financial management system for the Department of Defense which will assist management in the allocation of resources. In addition, these gentlemen will visit installations of the Army and Air Force where test implementation of Project Prime concepts has been in process.

The concepts of this project and plans for Navy implementation of the financial management system were presented to the staff of the School on 8 November 1966 by the Navy Department Resource Management Systems Indoctrination Team (CONUS) headed by CAPT J. R. GRIEVE, USN. This team is visiting Navy activities throughout the United States to prepare for the first stages of implementation next July.

NOTICES.

Dean's List.

In accordance with the motion adopted by the Faculty at the February, 1966, meeting, a Dean's List of the academically outstanding students for each term has been established.

The Dean's List for Term I included 175 students who achieved a QPR of 2.65 or better during that term. The announcement to the students was made by individual letters.

Report on Faculty Orientation Cruise.

Professors McMasters and Schrady will speak on their orientation cruise aboard the USS TICONDEROGA (CVA-14). They observed carrier qualifications for pilots while underway, and will show color movies and slides of their cruise. The presentation will be in Room 400, Spanagel Hall, at 1510 Wednesday, 16 November. All interested faculty, staff and students are invited to attend. The presentation is expected to be of particular interest to faculty who have not experienced such a cruise.

December Commencement Exercises.

Commencement exercises for approximately ten students will be held in the Lobby of Herrmann Hall at 11 o'clock on 21 December. The students include four candidates for the Ph.D. degree. Faculty attendance will not be obligatory but each Department is expected to provide a representative at the ceremony.

National Science Foundation Graduate and Postdoctoral Fellowships.

The National Science Foundation has announced its Fellowship Programs for the 1967-1968 academic year. These programs provide support to scientists and science teachers for scientific study or scientific work designed to meet their individual needs, and are made available primarily for young scientists who have demonstrated special aptitude for advanced training. Recipients must be citizens or nationals of the United States.

Fellowships are available for studies at the graduate level, and studies or work at the postdoctoral level and senior postdoctoral level (for scientists who have held a doctoral degree in one of the basic sciences for at least five years). In general, Fellows may not accept any compensation or supplementation, or receive another fellowship or similar award during tenure, except for remuneration for limited teaching responsibilities and for sabbatical leave pay.

A copy of the brochures announcing these programs are available for perusal in the Office of the Dean. More detailed information about these programs may be obtained by writing to the Fellowships Section, Division of Graduate Education in Science, National Science Foundation, Washington, D. C. 20550. The closing date for receipt of applications for Graduate Fellowships is 9 December 1966, and for Postdoctoral Fellowships 12 December 1966. The awards will be announced in March 1967.

NEW USNPGS FACULTY

CDR. Joseph P. Leo, USN.

CDR LEO received his B.A. degree in 1946 from Yale University. He was commissioned in the U. S. Navy the same year and has served on active duty since that time. He was designated a Naval Aviator in 1950, and graduated from the Postgraduate Naval Intelligence School in 1956. His aviation assignments have included tours with multi-engine squadrons and he has served in intelligence assignments afloat and overseas. He joined the Faculty of the Naval Warfare Department in September, 1966, as Intelligence Instructor.

Allen E. Fuhs, Professor of Aeronautics.

Professor Fuhs received his Ph.D. degree in Mechanical Engineering in 1958 from the California Institute of Technology, majoring in Jet Propulsion and Gas Dynamics. Since 1960 and until his appointment at the Postgraduate School he has been a Staff Scientist in the Plasma Research Laboratory of Aerospace Corporation. During this period he also served as a technological assistant to the Office of Science and Technology, Executive Office of the President, and in 1964-65 was a Visiting Professor at the University of Colorado. Professor Fuhs joined the Faculty of the Aeronautical Engineering Department in November, 1966.

PRINCIPAL PROFESSIONAL ACTIVITIES.

Professor Allen E. Fuhs of the Department of Aeronautics was recently issued a patent on one of his inventions, an electrical conductivity profile meter. The patent is assigned to Aerospace Corp., Los Angeles, where Professor Fuhs is a Consultant. Instrumentation based on the invention is used on board re-entry vehicles to determine the spatial distribution of electrical conductivity in the plasma sheath. The instrument has been flown successfully on several re-entry vehicles.

Professor Hugh M. Martinez of the Department of Mathematics was recently issued a patent titled "Methods and Apparatus for Polar to Rectangular Transformation." This invention concerns methods and apparatus for producing physical quantities representing mathematical functions and, in particular, the transformation from polar to rectangular coordinate systems. This invention provides relatively simple, reliable and accurate apparatus for generating this transformation. It is closely related to another recent invention of Professor Martinez reported in the 19 September 1966 issue of this Bulletin.

Associate Professor James A. Miller, Department of Aeronautics, has recently returned from a trip to Europe. On 10 October he presented a paper "Ground Surface Erosion Occasioned by a Rocket Braked Vehicle," co-authored by CAPT D. V. Shuter, USMC, before the 17th Congress of the International Astronautical Federation in Madrid. Later he conferred with research engineers in England and Paris in connection with his current research work. He also delivered a lecture at the Illinois Institute of Technology on the same topic as the paper presented at Madrid.

Abstract of paper: Recent interest in problems of lunar landings by rocket propelled and braked vehicles has lead to interest in problems of landing surface erosion. The present study was designed to allow prediction of erosion rates due to impingement of a jet of finite diameter. Comparison of the analytical results with experimental early erosion rates is in progress.

Associate Professor George L. Sackman, of the Electrical Engineering Department, presented the following paper at the Annual Meeting of IEEE Group on Electron Devices held October 25-28 in Washington, D. C.: "The Hydracon Image System," co-authored by N. F. Fyler.

Abstract: This paper describes an electronic scanning device with active mosaic elements that serves to convert images with various sources of illumination energy into real-time television pictures. Application to sonic images in water is examined in some detail. The transduced one-to-one mapping becomes a potential field image in the Hydracon tube which is scanned by an electron beam in television camera fashion to produce a conventional video signal.

FACULTY PUBLICATIONS.

Wilken, D. R. and Langford, Eric S.
Failure probability formulas for systems with spares.
Operations Research, Vol. 14, No. 4, p. 731-732. August 1966.

Abstract: Let there be n systems operating independently, each system demonstrating an exponential failure pattern with MTBF equal to $1/\lambda$. Suppose that all systems are 'up' at time $t=0$, and suppose that s spare systems are provisioned. When a system fails, it is instantaneously replaced by a spare (if any are left). We derive the expression $P(i; s, n, t)$ for the probability of exactly i failures in a time period of length t.

Han, K. W. and Thaler, G. J.

Control System Analysis and design using a Parameter Space Method. IEEE Transactions on Automatic Control. Vol. AC-11, No. 3, p. 560-563.

Abstract. A method of describing a system in parameter space is presented in this paper. This method can be applied to the analysis and design of high-order control systems with multiple variable or adjustable parameters.

Choe, H. H. and Thaler, G. J.

An extension of Mitrovic's method: frequency response techniques. IEEE Transactions on Automatic Control. Vol. AC-11, No. 3, p. 569-573.

Abstract. In many feedback control problems, dynamic specifications limit both the transient response and the frequency response. Usual techniques for analysis and design are concerned with only one of these specifications, and the other is checked as often as necessary. In this paper it is shown that the Mitrovic equations are readily solved to evaluate the closed loop frequency response with a simple graphical construction. Equations for loci of constant band width are derived and the use of these loci in conjunction with the root locations and frequency response is illustrated.

Calendar of Faculty Professional Trips

M. L. Cotton J. B. Cowie H. J. Hauer U. Haupt C. H. Kahr J. S. Ketchel D. E. Kirk U. R. Kodres D. G. Williams	11/8 - 11/10	San Francisco	Fall Joint Computer Conf., American Federation of Information Processes Societies.
T. Green W. C. Thompson	11/8 - 11/10	Pasadena	Consultations at Nat'l Engr. Science Co. on evaluation of prototype tank for NPGS.
C. E. Menneken	11/9 - 12/1	Washington Rome, London Norfolk Washington	Attend NATO Conferenc Mine Advisory Committ meeting, visit SACLAN' and Admiralty Underwa Weapons Establishment.
F. Bumiller F. R. Buskirk J. N. Dyer	11/10 -11/11	San Diego	Confer with Dr. Van Li General Atomics, and personnel at NEL.
G. A. Rahe	11/10-11/12	San Francisco	Attend meeting of Simulation Council
J. R. Clark G. F. Kinney	11/10-11/12	San Francisco	Golden Gate Metals Con American Society for M
W. W. Denner W. C. Thompson	11/14-11/16	San Francisco	Annual Meeting of the G logical Society of Ameri sessions on Marine Geo
A. E. Fuhs	11/14 -11/17	Norton AFB	Attend annual review of Missile Re-entry Syster Ballistic Systems Divisi

H. A. Titus	11/19-11/30	Johnsville, Pa. Washington	Present results of research on Phoenix Project to NABC and Project Officer.
G.J. Haltiner	11/20-11/24	Norfolk, Va. Washington	Navy Weather Research Facility Naval Weather Service, Naval Oceanographic Office.
R. E. Newton R. W. Prowell P. F. Pucci	11/25-12/7	New York City	87th Annual Meeting of ASME.
J. B. Cowie	11/25-12/17	Great Britain	Visit research centers at Cambridge, London, Glasgow, Edinburgh, Oxford and Manchester on behalf of Information Systems Branch, ONR.